

cyclin B2 (A-2): sc-28303

BACKGROUND

In eukaryotic cells, mitosis is initiated following the activation of a protein kinase known variously as maturation-promoting factor, M-phase specific histone kinase or M-phase kinase. This protein kinase is composed of a catalytic subunit (Cdc2), a regulatory subunit (cyclin B) and a low molecular weight subunit (p13-Suc 1). The Cdc/cyclin enzyme is subject to multiple levels of control of which the regulation of the catalytic subunit by tyrosine phosphorylation is the best understood. Tyrosine phosphorylation inhibits the Cdc2/cyclin B enzyme and tyrosine dephosphorylation, occurring at the onset of mitosis, directly activates the pre-MPF complex. Evidence has established that B-type cyclins not only act on M-phase regulatory subunits of the Cdc2 protein kinase, but also activate the Cdc25A and Cdc25B endogenous tyrosine phosphatase, of which Cdc2 is the physiological substrate. The two B-type cyclins, cyclin B1 and cyclin B2, have been shown to have distinct tissue distributions.

CHROMOSOMAL LOCATION

Genetic locus: CCNB2 (human) mapping to 15q22.2; Ccnb2 (mouse) mapping to 9 D.

SOURCE

cyclin B2 (A-2) is a mouse monoclonal antibody raised against amino acids 1-105 of cyclin B2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cyclin B2 (A-2) is available conjugated to agarose (sc-28303 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28303 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28303 PE), fluorescein (sc-28303 FITC), Alexa Fluor® 488 (sc-28303 AF488), Alexa Fluor® 546 (sc-28303 AF546), Alexa Fluor® 594 (sc-28303 AF594) or Alexa Fluor® 647 (sc-28303 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28303 AF680) or Alexa Fluor® 790 (sc-28303 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cyclin B2 (A-2) is recommended for detection of cyclin B2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for cyclin B2 siRNA (h): sc-37074, cyclin B2 siRNA (m): sc-37075, cyclin B2 shRNA Plasmid (h): sc-37074-SH, cyclin B2 shRNA Plasmid (m): sc-37075-SH, cyclin B2 shRNA (h) Lentiviral Particles: sc-37074-V and cyclin B2 shRNA (m) Lentiviral Particles: sc-37075-V.

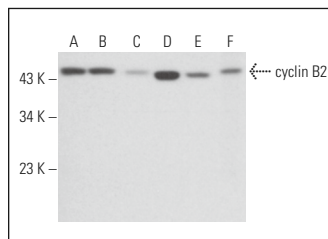
Molecular Weight of cyclin B2: 51 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, F9 cell lysate: sc-2245 or K-562 whole cell lysate: sc-2203.

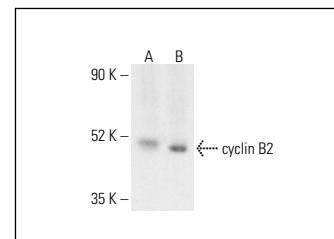
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



cyclin B2 (A-2): sc-28303. Western blot analysis of cyclin B2 expression in K-562 (A), HeLa (B), Jurkat (C), F9 (D) and c4 (E) whole cell lysates and rat testis tissue extract (F).



cyclin B2 (A-2) HRP: sc-28303 HRP. Direct western blot analysis of cyclin B2 expression in K-562 (A) and F9 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Fernandez-L, A., et al. 2007. Gene expression fingerprinting for human hereditary hemorrhagic telangiectasia. *Hum. Mol. Genet.* 16: 1515-1533.
- Shi, Q., et al. 2016. ISL1, a novel regulator of CCNB1, CCNB2 and c-MYC genes, promotes gastric cancer cell proliferation and tumor growth. *Oncotarget* 7: 36489-36500.
- Wu, T., et al. 2017. 17β-estradiol promotes islet cell proliferation in a partial pancreatectomy mouse model. *J. Endocr. Soc.* 1: 965-979.
- Rata, S., et al. 2018. Two interlinked bistable switches govern mitotic control in mammalian cells. *Curr. Biol.* 28: 3824-3832.e6.
- Jang, J., et al. 2019. Control over single-cell distribution of G₁ lengths by WNT governs pluripotency. *PLoS Biol.* 17: e3000453.
- Friedrich, M., et al. 2020. The role of incRNAs TAPIR-1 and -2 as diagnostic markers and potential therapeutic targets in prostate cancer. *Cancers* 12: 1122.
- Hagey, D.W. et al. 2020. Cyclin-B1/2 and -D1 act in opposition to coordinate cortical progenitor self-renewal and lineage commitment. *Nat. Commun.* 11: 2898.
- Bostanabad, S.Y., et al. 2021. Overexpression of β-Arrestins inhibits proliferation and motility in triple negative breast cancer cells. *Sci. Rep.* 11: 1539.
- Wang, R., et al. 2021. The ATPase Pontin is a key cell cycle regulator by amplifying E2F1 transcription response in glioma. *Cell Death Dis.* 12: 141.
- Liu, Q., et al. 2024. Cyclin B2 impairs the p53 signaling in nasopharyngeal carcinoma. *BMC Cancer* 24: 25.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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